The first mass resistance by American troops came around 8 a.m., at the Oak Tree crossroads, where Lieut. General Charles Cornwallis' column was fired upon by a force of nearly 600 men under Brigadier General Thomas Conway. His troops were joined by three companies of Pennsylvania–German volunteers of Major Nicholas Ohendorff, newly placed under the command of the French Colonel Charles Armand-Tuffin with three brass field pieces marking the first use of French command and arms in the war. After considerable fighting, Conway's troops were forced by the British through "Martin's Woods" (New Dover Rd., Edison), and had to withdraw, joining Lord Stirling's main force at The Short Hills, near Ash Swamp.

Divided by Cornwallis, Lord Stirling drew his troops into battle formation on the rise near Ash Swamp, determined to make a stand. His force of 1,798 men included General William "Scotch Willie" Maxwell's Brigade, consisting of four New Jersey Regiments, along with Brig. Gen. Thomas Conway's Pennsylvania Brigade and Colonel Charles Armand-Tuffin's (Marquis de la Rouerie) Independent Corps.

They also were joined by Col. Daniel Morgan's Corps of Rangers, from the 11th Va. Regt., and Dark's riflemen, as well as an undetermined number of militia.

The 3rd Hessian Grenadier battalion, under the command of Col. Friedrich Ludwig von Minnigerode, attacked the rebels' left flank, with British General and Commander-in-Chief William Howe joining in the attack.

While the Americans stood their ground at first, they were outnumbered by Howe's full forces, which included at least 15 cannons. The superiority of arms and numbers forced them to withdraw. Howe's aide, Capt. Frederick von Muenchhausen, later wrote about the battle, saying: "General Lord Stirling who was in command, had his horse shot and General Maxwell was almost captured by the Hessian Grenadiers, missing him only by a hair's breath... three new French brass three-pounders were taken."